CLAIM AMENDMENTS

1. (Currently Amended) An inductor comprising:

a semiconductor substrate;

a laminated structure including an insulating layer and a wiring layer layered alternately on said semiconductor substrate, wherein

said laminated structure comprises a first layer structure, a second layer structure, and a first insulating layer interposed between the first and second layer structures,

said first layer structure comprises a first wiring layer on which a first winding part and a second winding part in the same plane and disposed adjacent each other are wound,

said second layer structure comprises a second wiring layer on which a first wiring part is disposed, having a single path from ~~a first~~ one terminal to ~~a second~~ another terminal, and~~,~~

said first insulating layer comprises a first via hole and a second via hole connecting said first wiring layer to said second wiring layer, a first terminal of said first winding part is connected to a second terminal of said first wiring part through said first via hole, and a third terminal of said second winding part is connected to a fourth terminal of said first wiring part through said second via hole, and

a first current flows through said first winding part from a fifth terminal to said first terminal , and a second current flows through said second winding part from said third terminal to a sixth terminal , with directions of the first and second currents being opposite each other when a voltage is applied across said fifth terminal of said first winding part and said sixth terminal of said second winding part.

2. (Previously Presented) The inductor according to claim 1, wherein said first wiring part consists of at least one of a first portion, which is opposed to a region between said first and second winding parts, and a second portion, which extends along winding directions of said first and second winding parts, and said first wiring part is symmetrical with respect to a central point.

3. (Previously Presented) The inductor according to claim 1, wherein

said first layer structure further comprises a third wiring layer on an opposite side of said second wiring layer with respect to said first wiring layer, and a second insulating layer interposed between said first and third wiring layers,

said second insulating layer comprises a third via hole and a fourth via hole connecting said first wiring layer to said third wiring layer,

a third winding part and a fourth winding part in the same plane are disposed adjacent to each other on said third wiring layer and wound,

said third winding part comprises a seventh terminal electrically connected to said first terminal of said first winding part through said third via hole and a eighth terminal connected to said fifth terminal of said first winding part,

said fourth winding part comprises a ninth terminal electrically connected to said third terminal of said second winding part through said fourth via hole and a tenth terminal connected to said sixth terminal of said second winding part, and

a third current flows through said third winding part from said eighth terminal to said seventh terminal and a fourth current flows through said fourth winding part from said ninth terminal to said tenth terminal , with directions of the third current flowing through said third winding part being the same as the direction of the first current, and the direction of the fourth current flowing around said fourth winding part being the same as the direction of the second current when the voltage is applied across said fifth terminal of said first winding part and said sixth terminal of said second winding part.

4. (Previously Presented) The inductor according to claim 1, wherein

said first layer structure further comprises a third wiring layer on the same side of said second wiring layer as said first wiring layer, and a second insulating layer interposed between said first and third wiring layers,

said first insulating layer is interposed between said second and third wiring layers and comprises first and second via holes connecting said second wiring layer to said third wiring layer,

said second insulating layer comprises a third via hole and a fourth via hole connecting said first wiring layer to said third wiring layer,

a third winding part and a fourth winding part in the same plane are disposed adjacent to each other on said third wiring layer and wound,

said first terminal of said first winding part is connected to a seventh terminal of said third winding part through said third via hole, a eighth terminal of said third winding part is connected to said second terminal of said first wiring part through said first via hole, said fourth terminal of said first wiring part is connected to a ninth terminal of said fourth winding part through said second via hole, and a tenth terminal of said fourth winding part is connected to said third terminal of said second winding part through said fourth via hole, and

a third current flows through said third winding part from said seventh terminal to said eighth terminal , and a fourth current flows through said fourth winding part from said ninth terminal to said tenth terminal , the direction of the third current being the same as the direction of first current , and the direction of the fourth current being the same as the direction of the second current when the voltage is applied across said fifth terminal of said first winding part and said sixth terminal of said second winding part.

5. (Previously Presented) The inductor according to claim 1, wherein

said second layer structure is positioned between said first layer structure and said semiconductor substrate,

said second layer structure further comprises a third wiring layer positioned between said second wiring layer and said semiconductor substrate, a fourth wiring layer positioned between said third wiring layer and said semiconductor substrate, a second insulating layer interposed between said second and third wiring layers, and a third insulating layer interposed between said third and fourth wiring layers,

said third wiring layer comprises a second wiring part having a single path from a first terminal of said second wiring part to a second terminal of said second wiring part and said fourth wiring layer comprises a third wiring part having a single path from a first terminal of said third wiring part to a second terminal of said third wiring part,

said second layer structure comprises a third via hole penetrating said second insulating layer, said third wiring layer, and said third insulating layer connecting said second wiring layer to said fourth wiring layer, a fourth via hole penetrating said third insulating layer and a fifth via hole penetrating said second wiring layer and said second insulating layer,

said second via hole and said fifth via hole form a sixth via hole connecting said first wiring layer to said third wiring layer,

said first, second, and third wiring parts have straight-line parts parallel to one another and arranged in a direction perpendicular to said semiconductor substrate,

said fourth terminal of said first wiring part is connected to a seventh terminal of said third wiring part through said third via hole, a eighth terminal of said third wiring part is connected to a ninth terminal of said second wiring part through said fourth via hole, and a tenth terminal of said second wiring part is connected to said third terminal of said second winding part though said sixth via hole, and

a straight line connecting a center of said first winding part to a center of said second winding part is perpendicular to a plane formed by said straight-line parts of said first, second, and third wiring parts.

6. (Previously Presented) The inductor according to claim 5, wherein each of said straight-line parts of said first, second, and third wiring parts is located opposite a region between said first and second winding parts.

7. (Previously Presented) The inductor according to claim 1, wherein said second layer structure further comprises a superconductor electromagnetic shielding plate between said semiconductor substrate and the wiring layer nearest said semiconductor substrate.

8. (Previously Presented) The inductor according to claim 1, wherein each of said first and second winding parts is wound in a circle .

9. (Previously Presented) The inductor according to claim 1, wherein each of said first and second winding parts is wound in a polygonal shape having more than four corners.